

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty) (PCT Rule 71.1)

To:

DREW & NAPIER LLC  
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Date of mailing  
(day/month/year) 7 July 2005 (07.07.2005)

Applicant's or agent's file reference

PCT/8115725

#### IMPORTANT NOTIFICATION

International application No.

PCT/SG 2004/000014

International filing date (day/month/year)

15 January 2004 (15.01.2004)

Priority Date (day/month/year)

24 January 2003 (24.01.2003)

Applicant

TEOH ENG-CHYE

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**  
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).  
  
Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.  
  
For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.  
  
The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>PCT/8115725</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/SG 2004/000014</b>	International filing date ( <i>day/month/year</i> ) <b>15 January 2004 (15.01.2004)</b>	Priority Date ( <i>day/month/year</i> ) <b>24 January 2003 (24.01.2003)</b>
International Patent Classification (IPC) or national classification and IPC  <b>IPC<sup>7</sup>: C02F 1/58</b>		
Applicant <b>TEOH ENG-CHYE</b>		

1.	This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>  4  </u> sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of <u>  11  </u> sheets.
3.	This report contains indications relating to the following items: <ul style="list-style-type: none"> <li>I.      <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II.     <input type="checkbox"/> Priority</li> <li>III.    <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV.    <input checked="" type="checkbox"/> Lack of unity of invention</li> <li>V.     <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI.    <input type="checkbox"/> Certain documents cited</li> <li>VII.   <input type="checkbox"/> Certain defects in the international application</li> <li>VIII. <input type="checkbox"/> Certain observations on the international application</li> </ul>

Date of submission of the demand  <div style="text-align: center;"><b>15.07.2004</b></div>	Date of completion of this report  
Name and mailing address of the IPEA/AT Austrian Patent Office. Dresdner Straße 87 A-1200 Vienna Facsimile No. 1/53424/200	Authorized officer  <div style="text-align: center;"><b>KOLLER G.</b></div> Telephone No. 1/53424/458

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SG 2004/000014

**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☐ the international application as originally filed
- ☒ the description:  
pages 12 (abstract), as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages 1-9, filed with the letter of 3 December 2004 (03.12.2004).
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages 10-11, filed with the letter of 3 December 2004 (03.12.2004).
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☒ The amendments have resulted in the cancellation of:**

- ☒ the description, pages 1-9.
- ☒ the claims, Nos. 1-8.
- ☐ the drawings, sheets/fig \_\_\_\_\_.

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed“ and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/SG 2004/000014**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement Novelty (N)	Claims 1-3, 7	YES
	Claims 4-6, 8	NO
Inventive step (IS)	Claims 1-3, 7	YES
	Claims 4-6, 8	NO
Industrial applicability (IA)	Claims 1-8	YES
	Claims ----	NO

## Citations and explanations (Rule 70.7)

The following documents have been cited in the Search Report:

D1: SU 923961 A1

D2: JP 09 122690 A

D3: US 5716528 A

D4: JP 2000 135492 A

D5: JP 05 064789 A

The subject matter of claims 1-3 relates to the reaction of nitrosonium ions – generated from nitrites or nitric acid – with organic nitrogen containing compounds at elevated temperature, which is restricted to a range of from 20 to 40°C.

Referring to applicant's argumentation concerning the presence of halide ions in the liquid to be treated it is agreed, that the method according to document D1 requires the presence of halide ions. Following the applicant's argumentation the presence or absence of halides is not essential for the subject-matter of claims 1-3. Thus, the process according to the present claims 1-3 differs significantly from that of document D1 in tolerating but not needing halide ions.

The process according to document D2 relates to the removal of organic nitrogen containing compounds from industrial waste water by treatment with sodium nitrite followed by filtration, ion exchange and ultra filtration. Accordingly, document D2 is not considered to be of particular relevance concerning the subject-matter of claims 1-3.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/ SG 04/00014

## Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V (page 1)

Accordingly, the subject-matter of the present claims 1-3 meets the requirements of Article 33(2) and (3) PCT, that means it is new and inventive.

Documents D3 to D5 are considered for the purpose of the subject-matter of the present claims 4-8, which represent a subject-matter without any common feature linking it to claims 1-3. Both of the independent claims represent single-step processes.

The subject-matter of claim 4 relates to a method for the removal of organic and inorganic contaminants from aqueous liquids including the addition of "a peroxide" in the presence of "suitable catalysts" at "controlled pH". There is no specification of the source of peroxide, which catalyst is used or which pH-value is to be controlled.

According to document D3 organic contaminants in waste water are efficiently removed by oxidation with hydrogen peroxide in the presence of catalytic amount of ferrous ions at an acid pH.

The abstract of document D5 describes the decomposition of waste water with hydrogen peroxide and a decomposition catalyst in the presence of activated carbon.

There is no indication in the present claim 4 excluding the need of ferrous ions or an acidic pH.

Both of the documents D3 and D5 indicate the use of hydrogen peroxide as the agent for the oxidation and perform the process at an acidic pH.

Although documents D3 to D5 mention the presence of activated carbon none of said documents indicates activated carbon as the catalyst.

Consequently, the subject-matter of the present claims 4-6 and 8 is not considered to meet the requirements of Article 33(2) and (3) PCT, that means it is not new or inventive. Claim 7 meets the above mentioned requirements.

The industrial applicability is acknowledged.